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"A Bis(pyrazolyl) (bipyridyl) Platinum Complex"

by

W. P. Sshafer, W. P. Connick, V. M. Miskowski, and H. B. Gray

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## A Bis(pyrazolyl) (bipyridyl) Platinum Complex

William P. Schaefer, William B. Connick, Vincent M. Miskowski and Harry B. Gray

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**Abstract.** Bis(3,5-dimethylpyrazolium)4,4'-dimethyl-2,2'-bipyridyl platinum(II)-0.5 tetrahydrofuran solvate·H<sub>2</sub>O, PtC<sub>24</sub>H<sub>32</sub>N<sub>6</sub>O<sub>1.5</sub>, M<sub>r</sub> = 623.65; monoclinic, P2<sub>1</sub>/n; *a* = 8.625(2), *b* = 20.593(8), *c* = 14.451(4) Å, β = 90.32(2)°, V = 2566.7(14) Å<sup>3</sup>, *Z* = 4, D<sub>z</sub> = 1.61 g cm<sup>-3</sup>, MoKα, 0.71073 Å, μ = 55.50 cm<sup>-1</sup>, F(000) = 1232, room temperature, R = 0.0387 for 2874 reflections with  $F_o^2 > 3\sigma(F_o^2)$ . The square-planar Pt complex has normal Pt-N(bipyridyl) bonds (2.009(8) Å) and slightly short Pt-N(pyrazolyl) bonds (1.983(7) Å). The ligand molecules have normal distances and angles; the planes of the pyrazolyl ligands are twisted by about 60° to the bipyridyl-Pt plane, with the closest contacts between the pyrazolyls being ~ 3.3 Å (C14...N5 and C19...N3).

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\* Contribution No. 8555

**Introduction.** In the course of our work on platinum(II) pyrazolyl bridged dimers, we have prepared a series of bis(pyrazolyl)bipyridyl platinum(II) monomers. These complexes have emissive states of MLCT or  $\pi$ - $\pi^*$  character, depending on the substituents on the pyrazole ring. Here we report the structure of bis(3,5-dimethylpyrazolium)-4,4'-dimethyl-2,2'-bipyridyl platinum(II), a derivative synthesized according to the literature method for the unmethylated analogue (Minghetti et al., 1979).

**Experimental.** Crystal a yellow needle,  $0.07 \times 0.07 \times 0.36$  mm; CAD-4 diffractometer,  $\omega$  scans; 25 reflections with  $14^\circ < 2\theta < 16^\circ$  used for unit cell; absorption correction based on psi scans of 6 reflections, relative transmissions from 0.882 to 1.000;  $(\sin\theta/\lambda)_{\max}$ , 0.59  $\text{\AA}^{-1}$ ;  $h$  from -10 to 10,  $k$  from -24 to 24,  $l$  from 0 to 17; three standard reflections (204,  $2\bar{5}\bar{2}$ ,  $2\bar{3}3$ ) showed no variations greater than predicted by counting statistics; 9834 reflections measured, 4501 independent; goodness of fit for merging 4368 multiples, 0.974;  $R_{\text{merge}} = 0.041$  for 3377 duplicates. All reflections used in solution and refinement of the structure; Pt atom located from Patterson map, remaining heavy atoms found by successive structure factor-Fourier calculations;  $F^2$  values used in least squares, with  $w = 1/\sigma^2(F_o^2)$ ; hydrogen atoms positioned by calculation ( $C-H = 0.95 \text{\AA}$ ) and not refined; coordinates and anisotropic displacement parameters of all atoms in the Pt molecule and the water O atom plus a scale factor refined;  $R$  (on  $F$ ) for 3933 reflections with  $F_o^2 > 0$ , 0.062;  $wR$  (on  $F^2$ ), 0.0078;  $S = 1.49$  for 271 parameters and 4501 reflections; weights taken as  $1/\sigma^2(F_o^2)$ ; variances ( $\sigma^2(F_o^2)$ ) derived from counting statistics plus an additional term,  $(0.014I)^2$ ; variances of the merged data by propagation of error plus another additional term,  $(0.014\bar{I})^2$ .  $(\Delta/\sigma)_{\max}$ , 0.01; final difference map has 1 peak  $2.2 \text{ e\AA}^{-3}$ ,  $1.8 \text{ \AA}$  from C18 and C19, next highest  $1.4 \text{ e\AA}^{-3}$  near the Pt atom; largest negative peak,  $-1.9 \text{ e\AA}^{-3}$ , near C23 of disordered THF. Atomic scattering factors and dispersion corrections from Cromer and Waber (1974) and Cromer (1974); computer programs were those of the CRYM Crystallographic Computing System (Duchamp, 1964) and ORTEP (Johnson, 1976). Final

refined parameters of the atoms are listed in Table 1. \* The tetrahydrofuran molecule is located near a center of symmetry and its parameters could not be refined; an idealized THF molecule was positioned based on difference maps.

We collected data for this compound with a crystal that had  $\beta = 90.14^\circ$ , solved and refined the structure, but large peaks in the difference map and distorted geometry in pyrazolyl ligand 2 caused us to conclude that our crystal was bad. The results reported here are based on data from a crystal that showed no sign of any twinning or deformity; still, the large positive peak in the difference map is near where the worst one was for the first crystal.

#### Discussion.

A drawing of the molecule including the numbering system is shown in Figure 1, and Table 2 gives distances and angles in the molecule. The packing is shown in Figure 2. The Pt-N distances to the bipyridyl N atoms are equal at 2.009(13) Å, and to the pyrazolyl N atoms at 1.983(11) Å. Distances and angles in the ligand atoms are normal, with C-CH<sub>3</sub> bonds being a bit short, especially in the pyrazolyl ligands (C18-C19, 1.449(14) Å is the shortest). The pyrazolyl ligands are twisted out of the Pt-bipyridyl plane by 64(3)° each. This orientation is comparable to other cis-bis nitrogen heterocycle platinum(II) systems (41.7° for cis-[Pt(N-methylimidazole)<sub>2</sub>Cl<sub>2</sub>] (Graves, Hodgson, van Kralingen & Reedijk, 1978) and 55.3° and 73.2° for cis-[Pt(pyrazole)<sub>2</sub>Cl<sub>2</sub>] (Cinelli *et al.*, 1989). There are short distances between N3 and C19 (3.32(1) Å) and N5 and C14 (3.33(1) Å). The hydrogen atoms on C14 and C19 show up as two sets of three H atoms each in the plane where they are expected, but none of them points toward the close nitrogen atom. The water

\* Lists of assigned hydrogen parameters, anisotropic displacement parameters, complete distances and angles, and observed and calculated structure factors have been deposited with the British Library Document Supply Centre as Supplementary Publication No. SUP XXXXX (25 pp.). Copies may be obtained through The Executive Secretary, International Union of Crystallography, 5 Abbey Square, Chester CH1 2HU, ENGLAND.

molecule is 2.82(1) Å from N4, indicating a hydrogen bond between them; there are also contacts between the water molecule and C5 and C8 in a different molecule (3.30(1) and 3.20(1) Å). The Pt–O(water) distance (4.492(7) Å) and all other intermolecular distances are at van der Waals' distances or greater.

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References:

Cinelli, M. A., Stoccoro, S., Minghetti, G., Bandini, A. L., Banditelli, G. & Bovio, B. (1989) *J. Org. Chem.*, **372**, 311-325.

Cromer, D. T., (1974) *International Tables For X-ray Crystallography*, Vol. IV, pp. 149-151.

Cromer, D. T. & Waber, J. T. (1974) *International Tables For X-ray Crystallography*, Vol. IV, pp. 99-101.

Duchamp, D. J. (1964) A.C.A. Meeting, Bozeman, Montana, paper B-14, p. 29.

Graves, B. J., Hodgson, D. J., van Kralingen, C. G. & Reedijk, J. (1978) *Inorganic Chemistry*, **17**, 3007-3011.

Johnson, C. K. (1976) ORTEP-II, A FORTRAN Thermal Ellipsoid Plot Program for Crystal Structure Illustrations. Report ORNL-3794, Third Revision, Oak Ridge National Laboratory, Oak Ridge, Tennessee.

Minghetti, G., Banditelli, G. & Bonati, F. (1979) *J. Chem. Soc. Dalton*, 1851-1856.

**Legends to Figures**

Figure 1. An ORTEP drawing of the molecule showing the numbering system. Heavy atoms are shown as 50% probability ellipsoids, hydrogen atoms as spheres of small, arbitrary size.

Figure 2. An ORTEP projection down the  $a$  axis, with 50% probability ellipsoids. The contents of one unit cell (not including hydrogen atoms) are shown, plus three additional THF molecules. Only one molecular orientation is shown at each THF site.

## Supplementary Material for:

## A Bis(pyrazolyl) (bipyridyl) Platinum Complex

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**Abstract.** *Eis(3,5-dimethylpyrazolium)4,4'-dimethyl-2,2'-bipyridyl* platinum(II)-0.5 tetrahydrofuran solvate·H<sub>2</sub>O, PtC<sub>24</sub>H<sub>32</sub>N<sub>6</sub>O<sub>1.5</sub>, M<sub>r</sub> = 623.65; monoclinic, *P2<sub>1</sub>/n*; *a* = 8.625(2), *b* = 20.593(8), *c* = 14.451(4) Å,  $\beta$  = 90.32(2)°, V = 2566.7(14) Å<sup>3</sup>, *Z* = 4, D<sub>z</sub> = 1.61 g cm<sup>-3</sup>, MoK $\alpha$ , 0.71073 Å,  $\mu$  = 55.50 cm<sup>-1</sup>, F(000) = 1232, room temperature, R = 0.0387 for 2874 reflections with  $F_o^2 > 3\sigma(F_o^2)$ . The square-planar Pt complex has normal Pt-N(bipyridyl) bonds (2.009(8) Å) and slightly short Pt-N(pyrazolyl) bonds (1.983(7) Å). The ligand molecules have normal distances and angles; the planes of the pyrazolyl ligands are twisted by about 60° to the bipyridyl-Pt plane, with the closest contacts between the pyrazolyls being  $\sim$  3.3 Å (C14···N5 and C19···N3).

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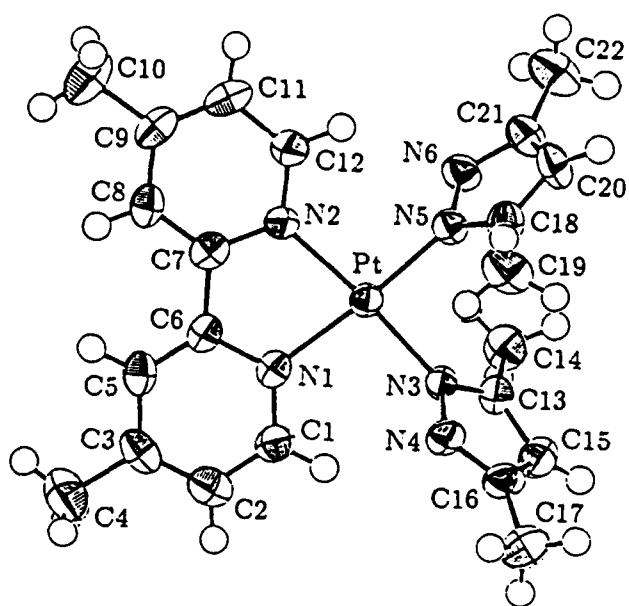


Figure 1. Schaefer, Connick, Muckowski  
& Gray

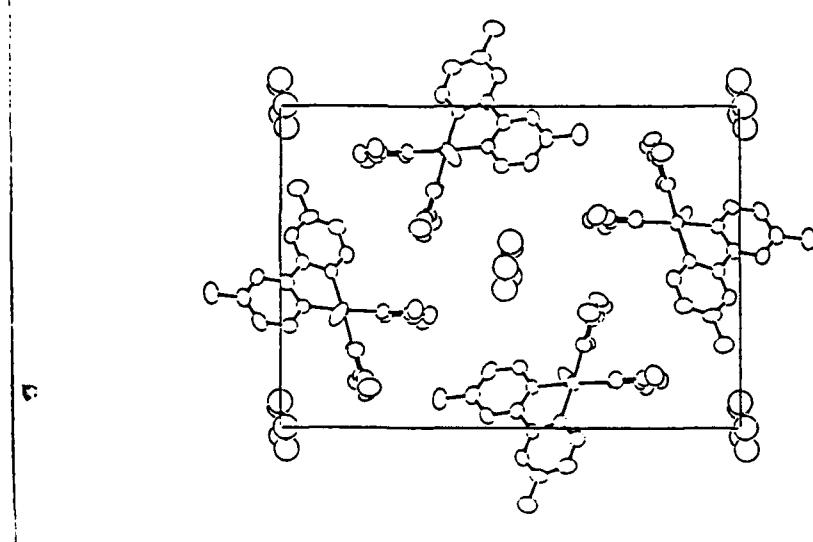


Figure 2. Schaefer, Connick, Mikowski  
& Gray

Table 1. Final Refined Parameters for  
Bis(3,5-dimethylpyrazolium)(5,5'-dimethyl-2,2'-dipyridyl) Platinum(II).

$x, y, z$  and  $U_{eq}^a \times 10^4$

Atom	$x$	$y$	$z$	$U_{eq}$
Pt	2451(.4)	1366(.2)	3618(.3)	372(1)
N1	1470(8)	1091(3)	4821(5)	396(18)
C1	540(10)	1446(5)	5346(7)	491(24)
C2	-19(11)	1231(5)	6192(7)	579(29)
C3	380(11)	620(5)	6506(7)	519(29)
C4	-198(14)	363(6)	7413(8)	818(38)
C5	1326(11)	243(4)	5948(7)	486(25)
C6	1867(9)	480(4)	5124(7)	393(22)
C7	2904(9)	129(4)	4492(7)	412(24)
C8	3346(11)	-506(4)	4646(7)	495(25)
C9	4327(11)	-804(5)	4013(8)	537(27)
C10	4760(14)	-1510(5)	4131(9)	810(39)
C11	4858(11)	-452(5)	3263(8)	539(27)
C12	4342(11)	194(5)	3147(7)	488(25)
N2	3379(8)	481(3)	3747(5)	384(18)
N3	1428(8)	2224(3)	3584(5)	396(19)
C13	2057(10)	2817(4)	3578(7)	445(24)
C14	3747(11)	2936(5)	3683(8)	615(29)
C15	872(12)	3267(5)	3496(7)	567(28)
C16	-471(10)	2901(5)	3445(7)	501(26)

Table 1. (Cont.)

Atom	<i>x</i>	<i>y</i>	<i>z</i>	<i>U<sub>eq</sub></i>
C17	-2140(12)	3126(5)	3354(8)	735(34)
N4	-161(8)	2272(4)	3502(5)	454(21)
N5	3488(8)	1581(3)	2430(5)	413(19)
C18	2854(11)	1740(5)	1615(7)	487(26)
C19	1160(12)	1696(6)	1420(8)	709(34)
C20	4045(12)	1901(5)	1020(7)	589(30)
C21	5428(11)	1837(5)	1529(7)	498(26)
C22	7058(12)	1937(6)	1233(8)	805(38)
N6	5087(8)	1639(4)	2389(6)	489(21)
W1	7648(8)	1255(3)	3509(6)	901(23)

$$^a U_{eq} = \frac{1}{3} \sum_i \sum_j [U_{ij}(a_i^* a_j^*)(\vec{a}_i \cdot \vec{a}_j)]$$

**Table 2. Distances and Angles not Involving Hydrogen in  
Bis(3,5-dimethylpyrazolium)(5,5'-dimethyl-2,2'-dipyridyl) Platinum(II).**

		Distance(Å)			Distance(Å)
Pt	-N1	2.018(7)	N3	-N4	1.379(10)
Pt	-N2	2.000(7)	C13	-C14	1.485(13)
Pt	-N3	1.975(7)	C13	-C15	1.384(13)
Pt	-N5	1.990(7)	C15	-C16	1.383(14)
N1	-C1	1.327(12)	C16	-C17	1.517(15)
N1	-C6	1.376(11)	C16	-N4	1.326(12)
C1	-C2	1.389(14)	N5	-C18	1.338(12)
C2	-C3	1.381(14)	N5	-N6	1.386(10)
C3	-C4	1.501(15)	C18	-C19	1.489(14)
C3	-C5	1.388(14)	C18	-C20	1.383(14)
C5	-C6	1.371(13)	C20	-C21	1.404(14)
C6	-C7	1.471(12)	C21	-C22	1.486(15)
C7	-C8	1.379(13)	C21	-N6	1.342(12)
C7	-N2	1.363(11)			
C8	-C9	1.391(14)			
C9	-C10	1.512(15)			
C9	-C11	1.384(14)			
C11	-C12	1.412(14)			
C12	-N2	1.341(12)			
N3	-C13	1.337(11)			

**Table 2. (Cont.)**

:

Angle(°)		Angle(°)	
N1 -Pt -N2	80.4(3)	C10 -C9 -C8	120.1(9)
N1 -Pt -N3	94.8(3)	C11 -C9 -C8	119.3(9)
N1 -Pt -N4	84.4(2)	C11 -C9 -C10	120.7(9)
N2 -Pt -N3	175.2(3)	C12 -C11 -C9	118.8(9)
N2 -Pt -N4	153.3(2)	N2 -C12 -C11	122.2(8)
N3 -Pt -N4	23.9(2)	C12 -N2 -C7	117.9(7)
C6 -N1 -C1	118.2(7)	N4 -N3 -C13	109.7(7)
C2 -C1 -N1	122.8(9)	C14 -C13 -N3	123.2(8)
C3 -C2 -C1	119.6(9)	C15 -C13 -N3	108.2(8)
C4 -C3 -C2	121.7(9)	C15 -C13 -C14	128.6(9)
C5 -C3 -C2	117.7(9)	C16 -C15 -C13	105.0(9)
C5 -C3 -C4	120.7(9)	C17 -C16 -C15	129.2(9)
C6 -C5 -C3	120.7(9)	N4 -C16 -C15	111.2(8)
C5 -C6 -N1	121.1(8)	N4 -C16 -C17	119.6(8)
C7 -C6 -N1	113.8(7)	C16 -N4 -N3	105.9(7)
C7 -C6 -C5	125.2(8)	N6 -N5 -C18	110.0(7)
C8 -C7 -C6	122.3(8)	C19 -C18 -N5	123.2(8)
N2 -C7 -C6	114.6(7)	C20 -C18 -N5	107.7(8)
N2 -C7 -C8	123.2(8)	C20 -C18 -C19	128.9(9)
C9 -C8 -C7	118.7(9)	C21 -C20 -C18	106.5(9)

Table 2. (Cont.)

Angle(°)		
C22	-C21	-C20
129.7(9)		
N6	-C21	-C20
108.9(8)		
N6	-C21	-C22
121.4(9)		
C21	-N6	-N5
106.8(7)		

Table S1. Non-Refined Parameters for  
Bis(3,5-dimethylpyrazolium)(5,5'-dimethyl-2,2'-dipyridyl) Platinum(II).

*x, y, z and U<sub>eq</sub><sup>a</sup> × 10<sup>4</sup>*

Atom	<i>x</i>	<i>y</i>	<i>z</i>	<i>B</i>	
O	5040	-30	660	10.0	*
C23	4770	20	-270	10.0	*
C24	6150	130	-670	10.0	*
C25	7280	110	10	10.0	*
C26	6630	-10	800	10.0	*
H1	253	1864	5135	4.5	*
H2	-665	1504	6554	5.3	*
H4A	205	-64	7508	7.6	*
H4B	169	636	7902	7.6	*
H4C	-1287	352	7415	7.6	*
H5	1587	-183	6135	4.3	*
H8	3009	-741	5171	4.5	*
H10A	4296	-1672	4683	7.3	*
H10B	4402	-1752	3617	7.3	*
H10C	5856	-1549	4183	7.3	*
H11	5555	-644	2837	4.9	*
H12	4699	434	2627	4.5	*
H14A	4273	2526	3723	5.7	*
H14B	4120	3169	3169	5.7	*
H14C	3942	3173	4237	5.7	*
H15	969	3730	3494	5.0	*
H17A	-2794	2755	3330	6.5	*
H17B	-2405	3387	3869	6.5	*
H17C	-2259	3370	2800	6.5	*
H19A	634	1576	1960	6.5	*
H19B	802	2110	1210	6.5	*
H19C	988	1384	944	6.5	*
H20	3939	2030	394	5.2	*
H22A	7735	1860	1739	7.4	*
H22B	7292	1658	738	7.4	*
H22C	7178	2380	1036	7.4	*
H23A	4332	-372	-499	10.0	*
H23B	4083	370	-393	10.0	*
H24A	6146	545	-958	10.0	*
H24B	6348	-195	-1121	10.0	*
H25A	8006	-223	-128	10.0	*
H25B	7800	516	39	10.0	*
H26A	6882	323	1230	10.0	*
H26B	6982	-416	1032	10.0	*

**Table S2. Anisotropic Displacement Parameters for Bis(3,5-dimethylpyrazolium)(5,5'-dimethyl-2,2'-dipyridyl) Platinum(II).**

Atom	$U_{11}$	$U_{22}$	$U_{33}$	$U_{12}$	$U_{13}$	$U_{23}$
Pt	306(2)	378(2)	432(2)	8(2)	-2(1)	44(2)
N1	381(42)	351(41)	455(49)	-27(33)	-60(37)	-15(36)
C1	441(53)	453(59)	579(66)	19(48)	33(49)	-17(54)
C2	524(61)	736(82)	477(66)	2(55)	38(51)	-34(59)
C3	394(58)	772(78)	392(63)	-150(53)	-30(49)	60(57)
C4	1039(98)	862(89)	554(79)	-144(73)	115(71)	72(67)
C5	518(61)	408(56)	531(68)	-95(47)	-58(53)	92(50)
C6	326(48)	347(51)	506(63)	-36(40)	-74(45)	14(46)
C7	260(47)	450(56)	524(65)	-30(40)	-115(45)	-33(49)
C8	531(61)	396(56)	558(68)	-64(47)	-44(53)	88(50)
C9	518(62)	422(59)	670(77)	97(50)	-172(57)	-57(57)
C10	989(90)	457(73)	980(98)	131(60)	-262(77)	-36(63)
C11	449(60)	488(62)	680(77)	131(48)	-111(55)	-179(57)
C12	529(61)	509(61)	426(62)	68(49)	52(50)	-3(49)
N2	354(42)	377(43)	421(48)	19(34)	42(37)	7(37)
N3	310(40)	409(45)	470(49)	18(33)	43(36)	83(37)
C13	477(63)	413(54)	446(59)	1(44)	-8(52)	58(48)
C14	501(62)	552(67)	792(84)	-98(51)	1(60)	41(59)
C15	585(68)	450(61)	667(77)	41(53)	21(58)	45(54)
C16	393(56)	618(68)	493(66)	153(50)	-23(49)	18(53)
C17	587(74)	768(78)	851(93)	207(59)	-25(63)	83(67)
N4	260(40)	491(49)	610(56)	34(35)	-29(38)	26(41)
N5	316(40)	498(49)	426(48)	9(33)	-11(36)	37(37)
C18	467(63)	512(59)	481(70)	-30(47)	-107(52)	90(49)
C19	450(64)	1012(91)	666(82)	-18(60)	-29(59)	68(68)
C20	636(70)	732(75)	400(64)	-65(57)	20(56)	186(55)
C21	429(58)	623(66)	442(64)	-110(49)	26(50)	42(52)
C22	593(76)	1137(101)	687(87)	-100(66)	131(66)	25(74)
N6	339(44)	617(52)	511(55)	10(36)	34(39)	44(42)
W1	727(49)	766(52)	1207(67)	-157(44)	-256(47)	561(52)

$U_{i,j}$  values have been multiplied by  $10^4$

The form of the displacement factor is:

$$\exp -2\pi^2 (U_{11}h^2a^*{}^2 + U_{22}k^2b^*{}^2 + U_{33}\ell^2c^*{}^2 + 2U_{12}hka^*b^* + 2U_{13}h\ell a^*c^* + 2U_{23}k\ell b^*c^*)$$

**Table S3. Complete Distances and Angles for Bis(3,5-dimethylpyrazolium)(5,5'-dimethyl-2,2'-dipyridyl) Platinum(II).**

	Distance(Å)		Distance(Å)
Pt - N1	2.018(7)	C16 - C17	1.517(15)
Pt - N2	2.000(7)	C16 - N4	1.326(12)
Pt - N3	1.975(7)	C17 - H17A	0.951
Pt - N5	1.990(7)	C17 - H17B	0.946
N1 - C1	1.327(12)	C17 - H17C	0.950
N1 - C6	1.376(11)	N5 - C18	1.338(12)
C1 - C2	1.389(14)	N5 - N6	1.386(10)
C1 - H1	0.946	C18 - C19	1.489(14)
C2 - C3	1.381(14)	C18 - C20	1.383(14)
C2 - H2	0.951	C19 - H19A	0.938
C3 - C4	1.501(15)	C19 - H19B	0.956
C3 - C5	1.388(14)	C19 - H19C	0.951
C4 - H4A	0.955	C20 - C21	1.404(14)
C4 - H4B	0.956	C20 - H20	0.947
C4 - H4C	0.939	C21 - C22	1.486(15)
C5 - C6	1.371(13)	C21 - N6	1.342(12)
C5 - H5	0.945	C22 - H22A	0.947
C6 - C7	1.471(12)	C22 - H22B	0.940
C7 - C8	1.379(13)	C22 - H22C	0.962
C7 - N2	1.363(11)	O - C23	1.367
C8 - C9	1.391(14)	O - C26	1.386
C8 - H8	0.947	C23 - C24	1.345
C9 - C10	1.512(15)	C23 - H23A	0.950
C9 - C11	1.384(14)	C23 - H23B	0.950
C10 - H10A	0.954	C24 - C25	1.381
C10 - H10B	0.945	C24 - H24A	0.950
C10 - H10C	0.951	C24 - H24B	0.950
C11 - C12	1.412(14)	C25 - C26	1.298
C11 - H11	0.950	C25 - H25A	0.950
C12 - N2	1.341(12)	C25 - H25B	0.950
C12 - H12	0.952	C26 - H26A	0.950
N3 - C13	1.337(11)	C26 - H26B	0.950
N3 - N4	1.379(10)		
C13 - C14	1.485(13)		
C13 - C15	1.384(13)		
C14 - H14A	0.959		
C14 - H14B	0.942		
C14 - H14C	0.951		
C15 - C16	1.383(14)		
C15 - H15	0.958		

Table S3 (Cont.)

	Angle(°)		Angle(°)
H19B -C19 -H19A	110.0	H26B -C26 -H26A	109.5
H19C -C19 -H19A	110.4		:
H19C -C19 -H19B	108.9		
C21 -C20 -C18	106.5(9)		
H20 -C20 -C18	126.4		
H20 -C20 -C21	127.1		
C22 -C21 -C20	129.7(9)		
N6 -C21 -C20	108.9(8)		
N6 -C21 -C22	121.4(9)		
H22A -C22 -C21	109.6		
H22B -C22 -C21	110.0		
H22C -C22 -C21	108.7		
H22B -C22 -H22A	110.6		
H22C -C22 -H22A	108.7		
H22C -C22 -H22B	109.3		
C21 -N6 -N5	106.8(7)		
C26 -O -C23	107.7		
C24 -C23 -O	106.8		
H23A -C23 -O	110.1		
H23B -C23 -O	110.1		
H23A -C23 -C24	110.1		
H23B -C23 -C24	110.1		
H23B -C23 -H23A	109.5		
C25 -C24 -C23	108.2		
H24A -C24 -C23	109.8		
H24B -C24 -C23	109.8		
H24A -C24 -C25	109.8		
H24B -C24 -C25	109.8		
H24B -C24 -H24A	109.5		
C26 -C25 -C24	109.0		
H25A -C25 -C24	109.6		
H25B -C25 -C24	109.6		
H25A -C25 -C26	109.6		
H25B -C25 -C26	109.6		
H25B -C25 -H25A	109.5		
C25 -C26 -O	108.0		
H26A -C26 -O	109.8		
H26B -C26 -O	109.8		
H26A -C26 -C25	109.8		
H26B -C26 -C25	109.8		

Table S3 (Cont.)

			Angle( $^{\circ}$ )	Angle( $^{\circ}$ )	
N1	-Pt	-N2	80.4(3)	H10B	-C10 -H10A 109.6
N1	-Pt	-N3	94.8(3)	H10C	-C10 -H10A 109.0
N1	-Pt	-N4	84.4(2)	H10C	-C10 -H10B 109.8
N2	-Pt	-N3	175.2(3)	C12	-C11 -C9 118.8(9)
N2	-Pt	-N4	153.3(2)	H11	-C11 -C9 120.2
N3	-Pt	-N4	23.9(2)	H11	-C11 -C12 121.1
C6	-N1	-C1	118.2(7)	N2	-C12 -C11 122.2(8)
C2	-C1	-N1	122.8(9)	H12	-C12 -C11 118.7
H1	-C1	-N1	118.4	H12	-C12 -N2 119.1
H1	-C1	-C2	118.8	C12	-N2 -C7 117.9(7)
C3	-C2	-C1	119.6(9)	N4	-N3 -C13 109.7(7)
H2	-C2	-C1	120.1	C14	-C13 -N3 123.2(8)
H2	-C2	-C3	120.3	C15	-C13 -N3 108.2(8)
C4	-C3	-C2	121.7(9)	C15	-C13 -C14 128.6(9)
C5	-C3	-C2	117.7(9)	H14A	-C14 -C13 109.0
C5	-C3	-C4	120.7(9)	H14B	-C14 -C13 110.0
H4A	-C4	-C3	109.1	H14C	-C14 -C13 109.8
H4B	-C4	-C3	109.1	H14B	-C14 -H14A 109.4
H4C	-C4	-C3	110.3	H14C	-C14 -H14A 108.6
H4B	-C4	-H4A	108.5	H14C	-C14 -H14B 110.1
H4C	-C4	-H4A	109.9	C16	-C15 -C13 105.0(9)
H4C	-C4	-H4B	109.8	H15	-C15 -C13 127.0
C6	-C5	-C3	120.7(9)	H15	-C15 -C16 128.0
H5	-C5	-C3	119.5	C17	-C16 -C15 129.2(9)
H5	-C5	-C6	119.8	N4	-C16 -C15 111.2(8)
C5	-C6	-N1	121.1(8)	N4	-C16 -C17 119.6(8)
C7	-C6	-N1	113.8(7)	H17A	-C17 -C16 108.7
C7	-C6	-C5	125.2(8)	H17B	-C17 -C16 109.8
C8	-C7	-C6	122.3(8)	H17C	-C17 -C16 109.4
N2	-C7	-C6	114.6(7)	H17B	-C17 -H17A 109.7
N2	-C7	-C8	123.2(8)	H17C	-C17 -H17A 109.4
C9	-C8	-C7	118.7(9)	H17C	-C17 -H17B 109.8
H8	-C8	-C7	121.8	C16	-N4 -N3 105.9(7)
H8	-C8	-C9	119.5	N6	-N5 -C18 110.0(7)
C10	-C9	-C8	120.1(9)	C19	-C18 -N5 123.2(8)
C11	-C9	-C8	119.3(9)	C20	-C18 -N5 107.7(8)
C11	-C9	-C10	120.7(9)	C20	-C18 -C19 128.9(9)
H10A	-C10	-C9	109.1	H19A	-C19 -C18 109.7
H10B	-C10	-C9	109.9	H19B	-C19 -C18 108.7
H10C	-C10	-C9	109.5	H19C	-C19 -C18 109.1

Table S4. Observed and Calculated Structure Factors for  
Bis(3,5-dimethylpyrazolium)(5,5'-dimethyl-2,2'-dipyridyl) Platinum(II)

The columns contain, in order,  $k$ ,  $10F_{obs}$ ,  $10F_{calc}$  and  $10\left(\frac{F_{obs}^2 - F_{calc}^2}{\sigma F_{obs}^2}\right)$ . A minus sign preceding  $F_{obs}$  indicates that  $F_{obs}^2$  is negative.

### Bis(pyrazolium)dipyridyl Platinum Complex.

Page 1

- 10			k	1	- 9			k	5	- 8			k	3	10			278	137	23
1	530	449	25	0	426	492	- 15	1	495	548	- 21	11	615	599	5					
2	403	397	1	1	379	392	- 3	2	739	733	- 2					- 8	k	8		
3	639	597	15	2	- 71	84	- 5	3	713	714	0									
4	177	88	10	3	289	306	- 3	4	89	143	- 6					0	837	857	- 5	
5	169	210	- 6	4	526	504	- 7	5	246	178	14					1	237	246	- 1	
- 10			k	2	5	227	261	- 7	6	625	605	8				2	66	164	- 10	
				6	257	278	- 4	7	835	609	10					3	162	160	0	
0	158	32	6	7	- 81	16	- 3	8	382	332	9					4	664	663	0	
1	578	566	4	8	514	483	- 10	9	187	175	2					5	296	287	- 2	
2	193	11	15	9	389	424	- 10	10	427	422	1					6	315	322	- 1	
3	367	404	- 10	- 9			k	6	11	596	592	1				7	208	163	- 7	
4	222	154	10						12	391	385	1				8	468	479	- 2	
- 10			k	3	1	456	432	7	- 8			k	4			- 8	k	9		
				2	106	170	- 7													
1	325	327	0	3	636	613	8	- 8			k	4								
2	521	526	- 1	4	99	107	0	0	1079	1100	- 7					1	219	146	10	
3	328	319	2	5	75	175	- 10	1	- 111	16	- 6					2	770	718	19	
- 9			k	1	6	255	232	4	2	202	137	11				3	33	99	- 3	
				7	691	629	22	3	158	23	12					4	258	278	- 4	
0	472	428	10	8	- 165	36	- 12	4	839	852	- 5					5	- 97	116	- 10	
1	517	577	- 23	- 9			k	7	5	35	113	- 6				6	591	564	9	
2	54	73	- 1	0	317	332	- 2	6	362	347	4					7	218	239	- 3	
3	393	433	- 13	1	527	501	8	7	139	44	8					8	290	337	- 11	
4	494	480	5	2	146	65	7	8	741	748	- 2					- 8			10	
5	593	614	- 8	3	284	339	- 12	9	- 33	51	- 1									
6	284	218	14	4	227	259	- 5	10	553	526	10					0	498	386	22	
7	164	183	- 3	5	523	547	- 7	11	129	17	7					1	412	440	- 8	
8	379	378	0	6	204	157	6	12	546	518	9					2	- 54	98	- 5	
9	623	598	9					13	32	38	0					3	196	239	- 7	
10	330	291	9	- 9			k	8	14	550	541	3				4	345	333	2	
11	193	6	16													5	381	437	- 15	
- 9			k	2	1	197	146	6	1	460	455	1				- 7	k	1		
				2	609	618	- 3	2	637	655	- 7									
1	590	581	3	3	247	211	6	3	282	283	0					0	841	910	- 25	
2	154	119	4	- 8			k	1	4	273	308	- 9					1	815	804	- 5
3	793	777	6						5	229	212	3					2	268	176	24
4	141	11	9	1	562	544	7	6	546	588	- 16					3	562	560	1	
5	296	291	1	2	761	774	- 6	7	452	510	- 21					4	725	649	36	
6	75	42	1	3	744	747	- 1	8	320	258	15					5	959	985	- 13	
7	787	750	15	4	257	248	2	9	129	47	6					6	276	275	0	
8	- 84	16	- 3	5	398	394	1	10	499	509	- 3					7	329	275	17	
9	103	124	- 2	6	587	540	19	11	465	460	1					8	663	683	- 9	
10	180	114	8	7	721	724	- 1	12	417	443	- 8					9	800	810	- 4	
11	661	672	- 4	8	234	246	- 2	13	- 111	43	- 6					10	231	196	8	
- 9			k	3	9	235	107	21	- 8			k	6			11	150	34	12	
				10	372	394	- 7								12	348	229	32		
0	694	652	11	11	766	743	10	0	193	42	11					13	683	674	4	
1	461	421	12	12	491	459	11	1	609	626	- 6					14	481	459	7	
2	277	105	27	13	83	93	0	2	- 216	97	- 30					15	294	244	11	
3	340	327	3	14	159	128	3	3	261	295	- 8					16	206	154	8	
4	624	608	6	15	457	455	0	4	212	246	- 7					17	385	431	- 14	
5	398	434	- 11	- 8			k	2	5	658	697	- 16					- 7	k	2	
6	260	220	8						6	- 139	39	- 10								
7	- 149	96	- 15	0	97	133	- 3	7	109	212	- 15					1	720	732	- 5	
8	474	485	- 3	1	885	912	- 12	8	219	220	0					2	113	52	6	
9	474	436	12	2	- 118	19	- 8	9	673	677	- 1					3	970	997	- 14	
10	348	323	6	3	522	548	- 10	10	221	63	18					4	- 20	91	- 5	
- 9			k	4	4	110	18	6	11	- 152	23	- 11					5	719	706	6
				5	882	905	- 11	12	261	115	22					6	332	226	31	
1	- 41	36	- 1	6	129	12	9	- 8			k	7				7	1179	1170	4	
2	789	622	- 13	7	284	319	- 10									8	174	97	12	
3	- 73	5	- 2	8	192	31	18	1	442	467	- 6					9	232	207	5	
4	137	105	3	9	829	846	- 7	2	245	278	- 7					10	88	129	- 5	
5	- 138	40	- 10	10	124	15	7	3	676	684	- 3					11	944	921	10	
6	519	518	0	11	- 66	37	- 2	4	52	92	- 2					12	163	61	12	
7	- 72	25	- 2	12	161	70	9	5	223	280	- 12					13	263	252	2	
8	407	401	1	13	762	746	6	6	306	304	0					14	- 04	86	- 8	
9	- 107	3	- 5	14	139	22	8	7	585	564	7					15	701	651	20	
10	544	537	2	15	168	221	- 9	8	224	276	- 11					16	- 129	55	- 9	
								9	67	148	- 7					17	252	268	- 3	

Bis(pyrazolium)dipyridyl Platinum Complex.

Page	2
4	1528
5	347
6	745
7	126
8	972
9	280
10	748
11	-109
12	422
13	-109
14	687
15	-160
16	223
17	-102
18	583
19	-88
-6	k
1	368
2	1251
3	459
4	430
5	366
6	1014
7	612
8	628
9	-177
10	668
11	422
12	522
13	-30
14	441
15	458
16	627
17	246
18	77
-6	k
0	294
1	690
2	149
3	712
4	416
5	1032
6	231
7	344
8	218
9	987
10	201
11	-154
12	159
13	634
14	193
15	223
16	137
17	655
-6	k
0	332
1	403
2	813
3	510
4	106
5	525
6	450
7	886
8	283
9	149
10	33
11	713
12	117
13	146
14	147
15	776
16	244
17	222
18	282
19	286
-6	k

-7	k	3	-7	k	7	2	330	375	-11	4	1528	1539	-5				
0	1066	1061	1	0	467	508	-11	3	365	339	6	5	347	347	0		
1	827	830	-1	1	586	532	21	4	-254	49	-30	6	745	769	-12		
2	259	236	6	2	-129	29	-9	5	195	182	1	7	126	5	10		
3	322	363	-14	3	212	213	0	-6	k	1	8	972	965	3			
4	856	835	10	4	244	334	-25	1	483	508	-12	10	748	749	-6		
5	904	877	13	5	811	812	0	2	840	859	-11	11	-109	21	-7		
6	474	467	2	6	293	318	-7	3	1045	991	29	12	422	440	-8		
7	156	190	-6	7	359	386	-8	4	212	177	9	13	-109	35	-7		
8	445	449	-1	8	62	184	-15	5	522	498	12	14	687	679	3		
9	796	601	-2	9	586	593	-2	6	793	794	0	15	-160	77	-17		
10	267	305	-11	10	183	184	0	7	1244	1259	-7	16	223	275	-12		
11	138	63	8	11	-202	37	-22	8	358	345	5	17	-102	70	-7		
12	389	392	-1	12	-48	141	-10	9	147	87	9	18	583	590	-2		
13	558	574	-6	13	648	618	11	10	836	850	-7	19	-88	30	-4		
14	299	359	-17	14	176	190	-2	11	874	839	16	-6	k	5			
15	205	223	-3	-7	k	8		12	255	254	0						
16	280	234	9					13	98	136	-5	1	368	402	-13		
17	334	309	6					14	401	363	13	2	1251	1261	-4		
-7	k	4	1	212	254	-9		15	731	731	0	3	459	478	-8		
1	176	204	-5	2	695	700	-1		16	617	565	20	4	430	474	-19	
2	1167	1173	-3	3	365	349	4		17	338	383	-14	5	366	370	-1	
3	320	344	-8	4	319	331	-3		18	184	204	-3	6	1014	1048	-17	
4	361	384	-8	5	178	207	-5		19	464	495	-10	7	612	630	-8	
5	146	159	-2	6	838	830	3		-6	k	2		8	628	632	-2	
6	1086	1127	-20	7	244	217	5					9	-177	68	-24		
7	-107	22	-7	8	442	451	-3					10	668	622	20		
8	618	600	8	9	-130	177	-24					11	422	398	8		
9	-144	30	-13	10	348	359	-3		0	220	288	-15	12	522	539	-7	
10	660	643	7	11	370	385	-4		1	1054	1051	1	13	-30	26	0	
11	212	118	15	12	399	398	0		2	-124	106	-20	14	441	397	14	
12	601	604	0	-7	k	9			3	974	969	2	15	458	444	4	
13	199	153	7		0	1004	976	8		4	239	111	29	16	627	613	5
14	397	378	5		1	230	129	16		5	1475	1464	5	17	246	204	8
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5	1372	1402	-18	4	575	535	24	6	125	162	-7	14	231	251	-4

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15	552	553	0	-3	k	15	3	1601	1584	10	2	-58	33	-4	
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19	392	394	0	17	359	331	9	18	142	1	10	1	804	826	-11

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2	-84	121	-14	4	-230	70	-29	5	637	604	22	5	419	396	12
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				4	1523	1535	-6	4	598	561	17	7	938	900	19

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9	15	101	-6	3	k	12	4	2047	1995	28	6	381	332	23	
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19	406	386	6	10	243	305	-15	14	1088	1091	-1	16	343	368	-8
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9	1006	1019	-7	18	128	111	1	1	-126	105	-12	8	282	278	1
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8			7	96	122	-2	7	239	152	15					
0	686	704	-5	8	439	479	-13	8	566	542	8	9	k	8	
1	735	728	3	9	545	489	19	9	267	201	13				
2	165	51	13	10	86	215	-17	10	511	474	12	1	369	416	-12
3	434	420	5	11	136	51	7	11	236	18	23	2	505	379	24
4	372	370	0	12	314	290	5								
5	868	817	23												
6	178	190	-2	8	k	7						10	k	0	

## Bis(pyrazolium)dipyridyl Platinum Complex.

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	0	691	697	-2	10	k	1	10	k	2	4	314	255	13
1	203	142	13		1	288	195	17			10	k	3	
2	131	81	6		2	645	651	-2	0	205	243	-4		
3	215	140	18		3	284	249	7	1	492	490	0	1	492
4	712	665	24		4	167	186	-2	2	135	26	7	2	249
5	279	191	23		5	255	151	17	3	313	278	7	3	512